

Update on WxFX and Cluster-Based MM5 Development Efforts

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Briefing Outline

- Status of WxFX Development
- Status of Cluster-Based MM5 Development



Status of the WxFX Development Effort

Motivation for the Work



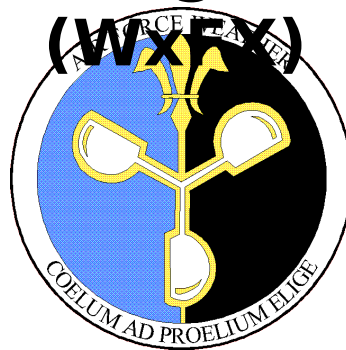
IWEDA

- Leverage the IWEDA and ACMES efforts to produce a Tactical Decision Aid system for use by military planners that can be driven
 - Against accredited and/or user rules
 - Using climatological data



ACMES

**Weather Effects for the
Warfighter**



Status of the WxFX Development Effort

- WxFX has Been Designed to be:
 - Platform Independent Using “Vanilla” Java
 - Can be Used in a “Webable” or Standalone Configuration
- Interface has an IWEDA “Look and Feel” But has been Redesigned to Conform with the NITES “Standard” GUI Concepts



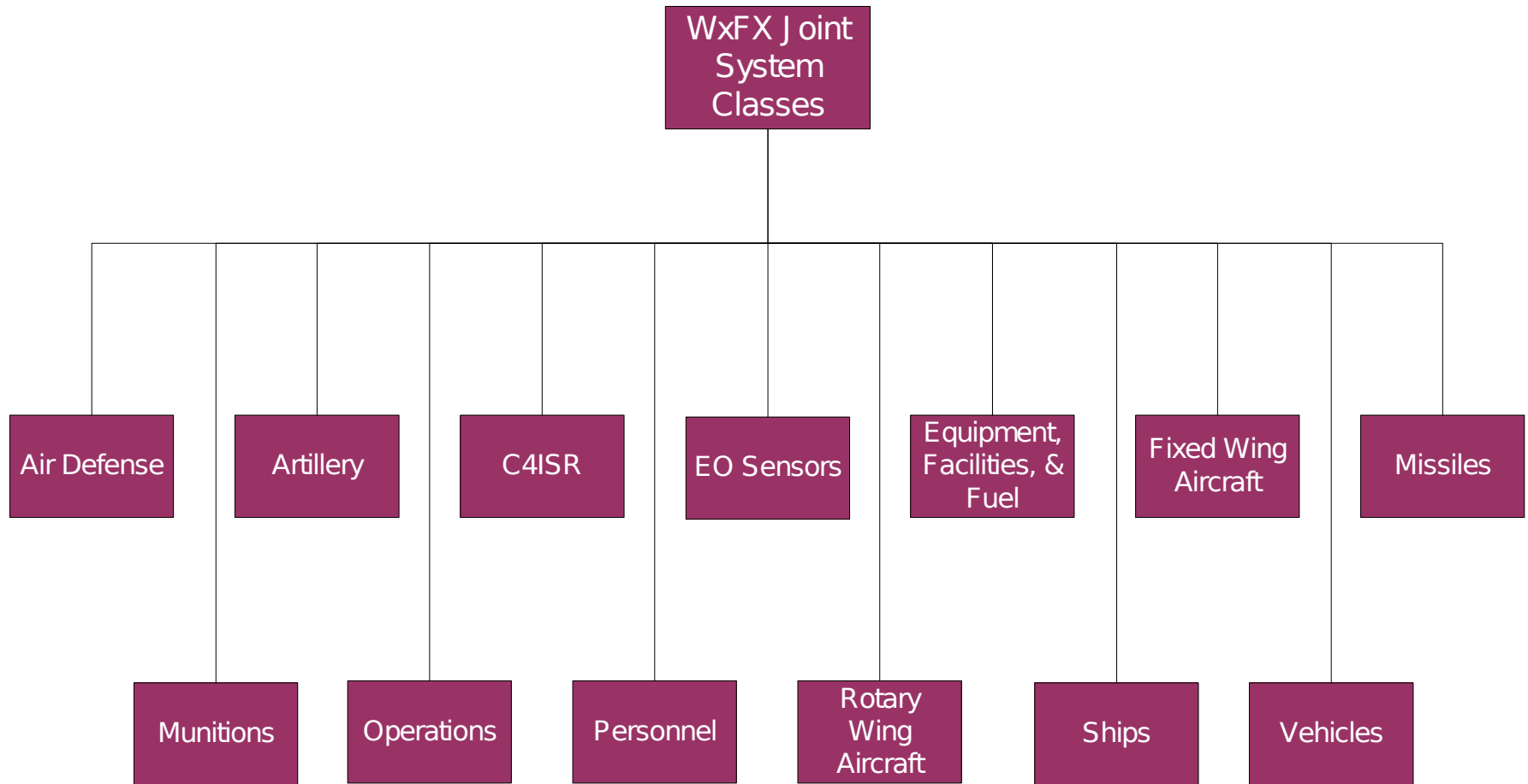
Status of the WxFX Development Effort

- All Study Conditions (e.g., Location, Analysis Times, Systems, Rules, Context Factors) can be Defined, Edited, and Saved
- “Drill Down” Tools Enable the User to Understand What Drove the Analysis
- WxFX is Independent of the:
 - Environmental Data Source
 - System Class Structure
 - Rules Source

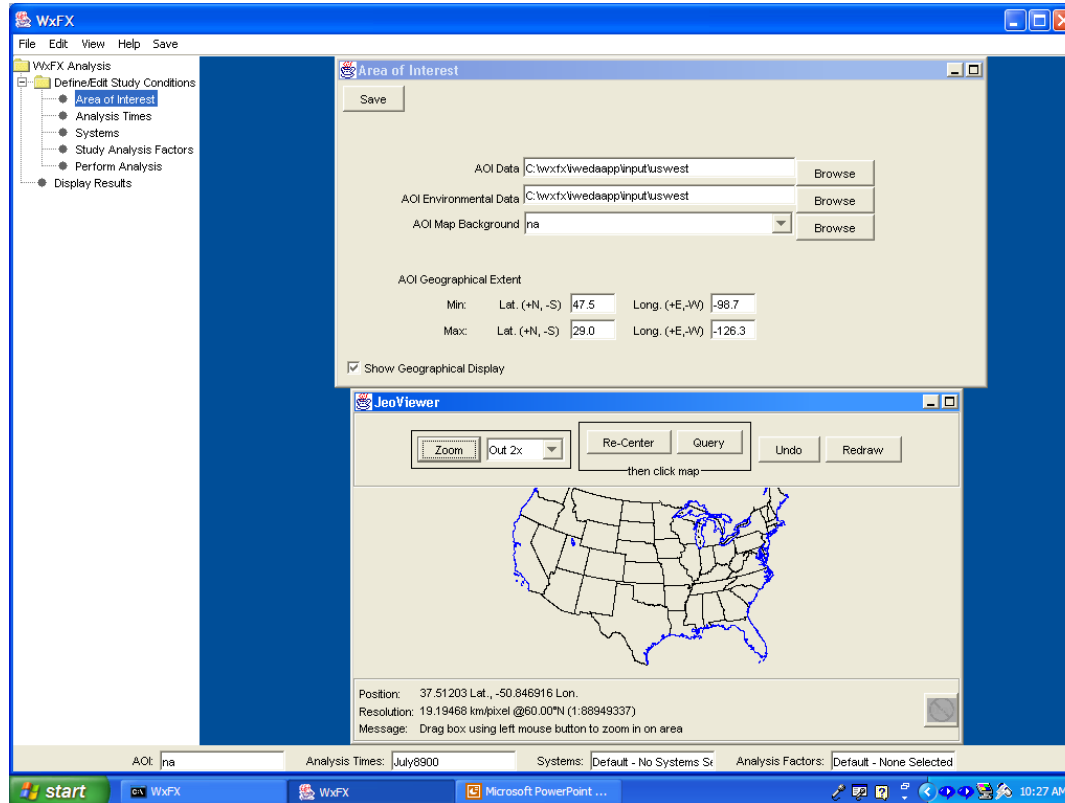


Status of the WxFX Development Effort

Joint Rules Set Implemented



Status of the WxFX Development Effort Recast in the NITES GUI Concepts

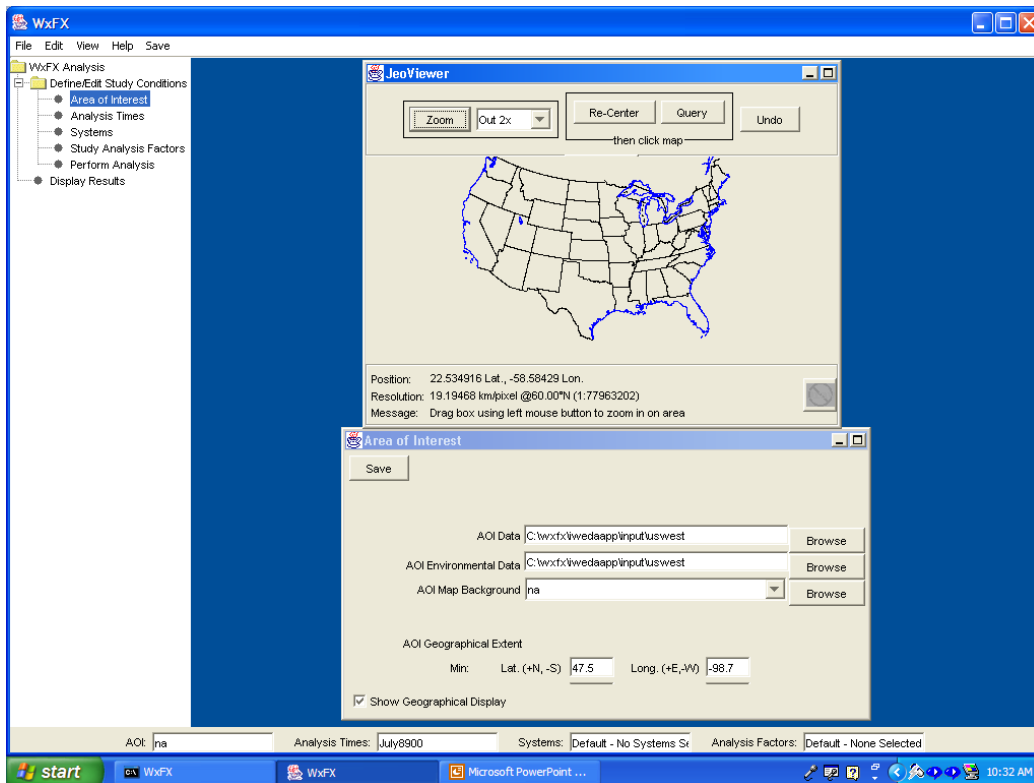


- The User can Define, Save, and Reuse an “Area of Interest”
- The New Java-Based JeoViewer GIS is Used for Spatial Displays
- Screens can Also be Reconfigured for “**NITES**” or “GCCS” Views



Status of the WxFX Development Effort

Recast in the NITES GUI Concepts



- The User can Define, Save, and Reuse an “Area of Interest”
- The New Java-Based JeoViewer GIS is Used for Spatial Displays
- Screens can Also be Reconfigured for “NITES” or “**GCCS**” Views



Status of the WxFX Development Effort

Recast in the NITES GUI Concepts

Analysis Times

Save

Start Year 1989 End Year 1989

For Each Year of Data, Analyze

☐ Every Month

☐ Every Season

Selected Month(s) or Season(s)

☐ Months

☐ Seasons

Within Each Day of Data, Analyze

☐ Every Hour

☐ Every Three Hours (0000, 0300, etc)

☐ Every Six Hours (0000, 0600, etc)

Selected Hour(s) or Time Period(s)

☒ Hours

☐ Time Periods

☒ Specific Start and End Dates

Start: July 1 End: September 1

July

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

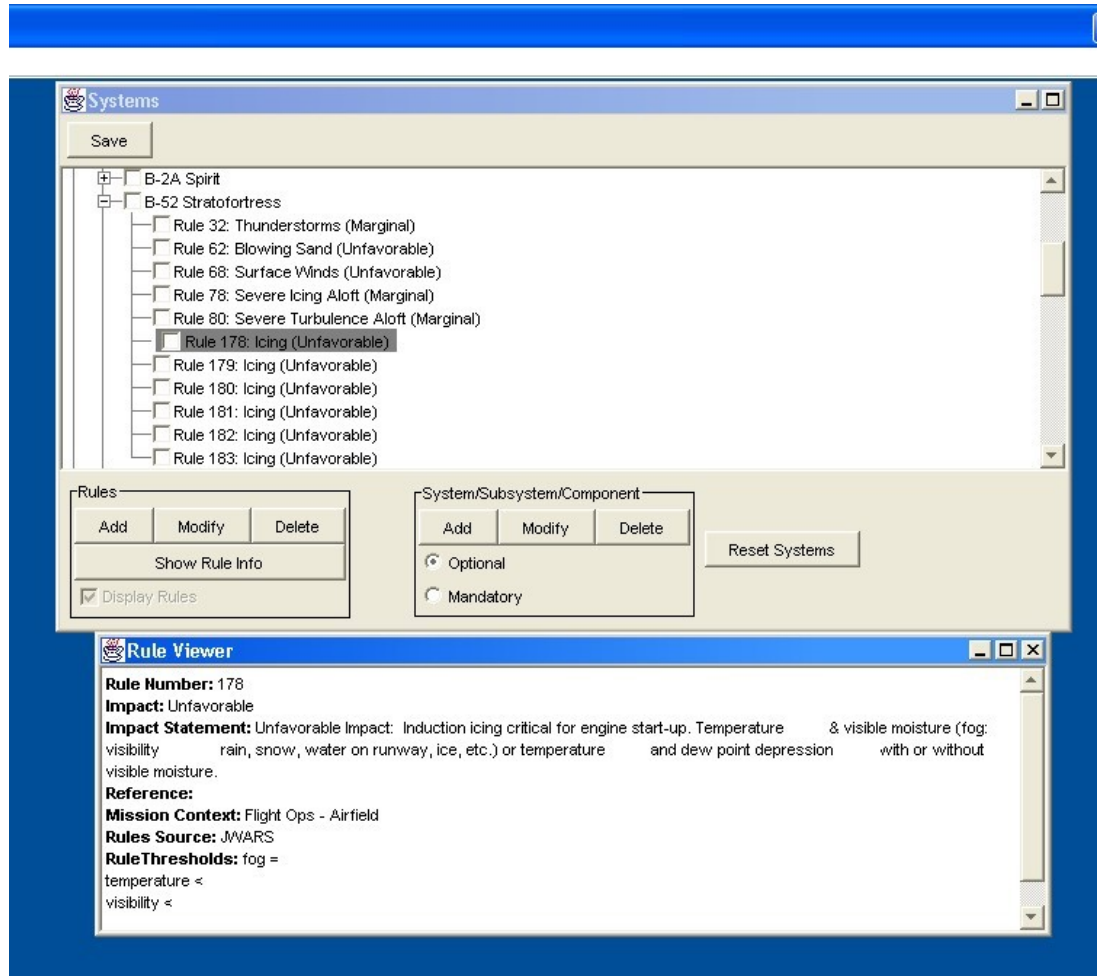
September

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30						

- The User has a Variety of Ways to Define the Times to Analyze
- A Calendar Tool lets you Pick Specific Start and Stop Dates



Status of the WxFX Development Effort Recast in the NITES GUI Concepts

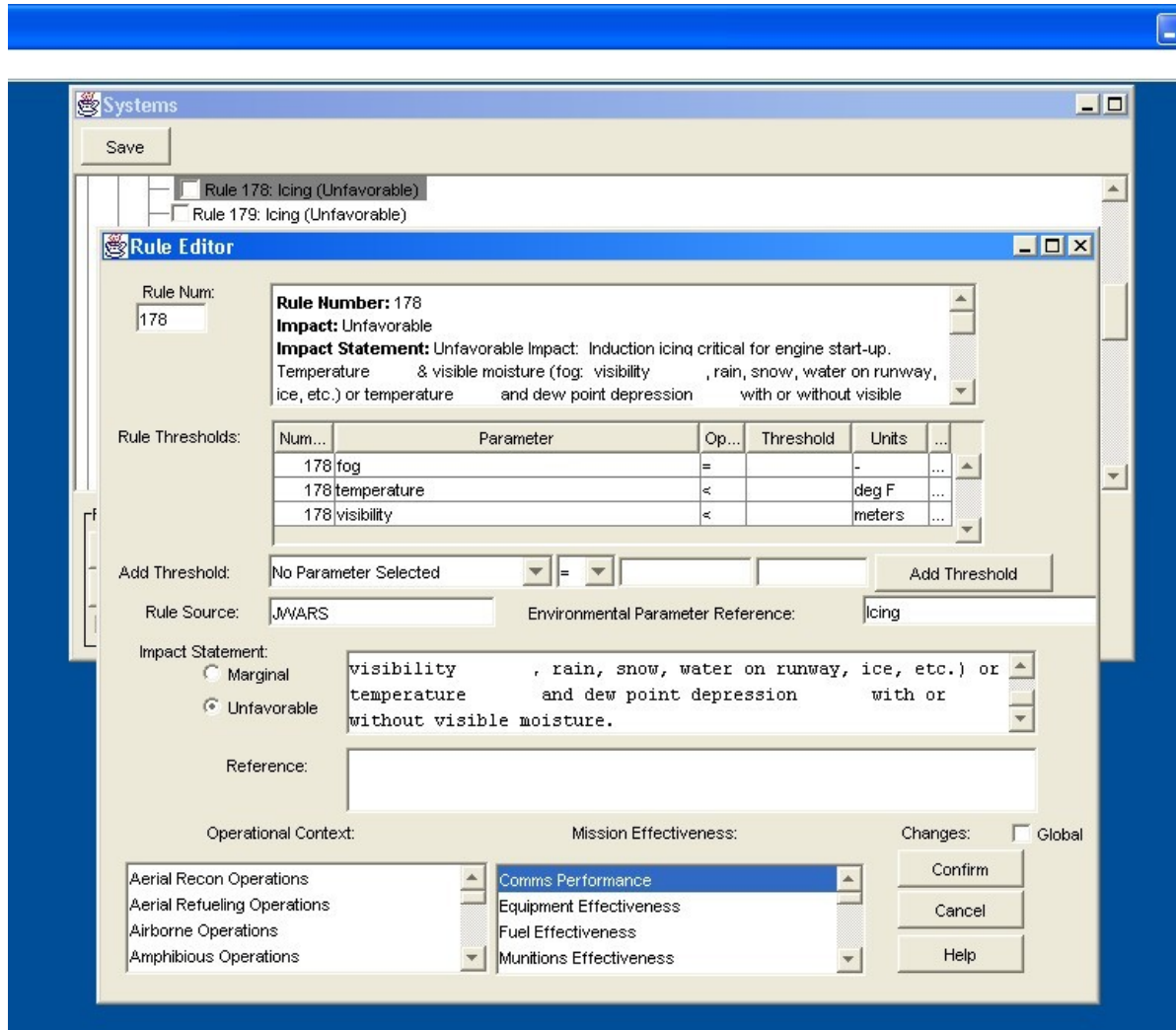


- The User can Select the Systems to Analyze and Create “Systems Packages” that can be Saved and Reused
- The User can Build New Systems Using “Drag and Drop” Cut and Paste Tools



Status of the WxFX Development Effort

Recast in the NITES GUI Concepts



- Rules can be Added, Edited, Deleted, and Saved
- Rules can be Copied from One System to Another Using “Cut” and “Paste”



Status of the WxFX Development Effort Recast in the NITES GUI Concepts

Study Analysis Factors

Save

Define the Minimum Thresholds for the Spatial Display Analysis
Then click 'Apply Threshold Changes'

No Data (below) 50

Unfavorable Performance 25

Marginal Performance 40

Apply Threshold Changes

Reset Thresholds to Default

Select the Mission Contexts to Include in the Analysis over the Entire Study Area

Operational Contexts

- Aerial Recon Operations
- Aerial Refueling Operations
- Airborne Operations
- Amphibious Operations
- Amphibious Operations - Combat
- Amphibious Operations - Training
- Attack Operations

Clear Selection Select All

Mission Effectiveness

- Comms Performance
- Equipment Effectiveness
- Fuel Effectiveness
- Munitions Effectiveness
- NBC Effectiveness
- Personnel Effectiveness
- POL Effectiveness

Clear Selection Select All

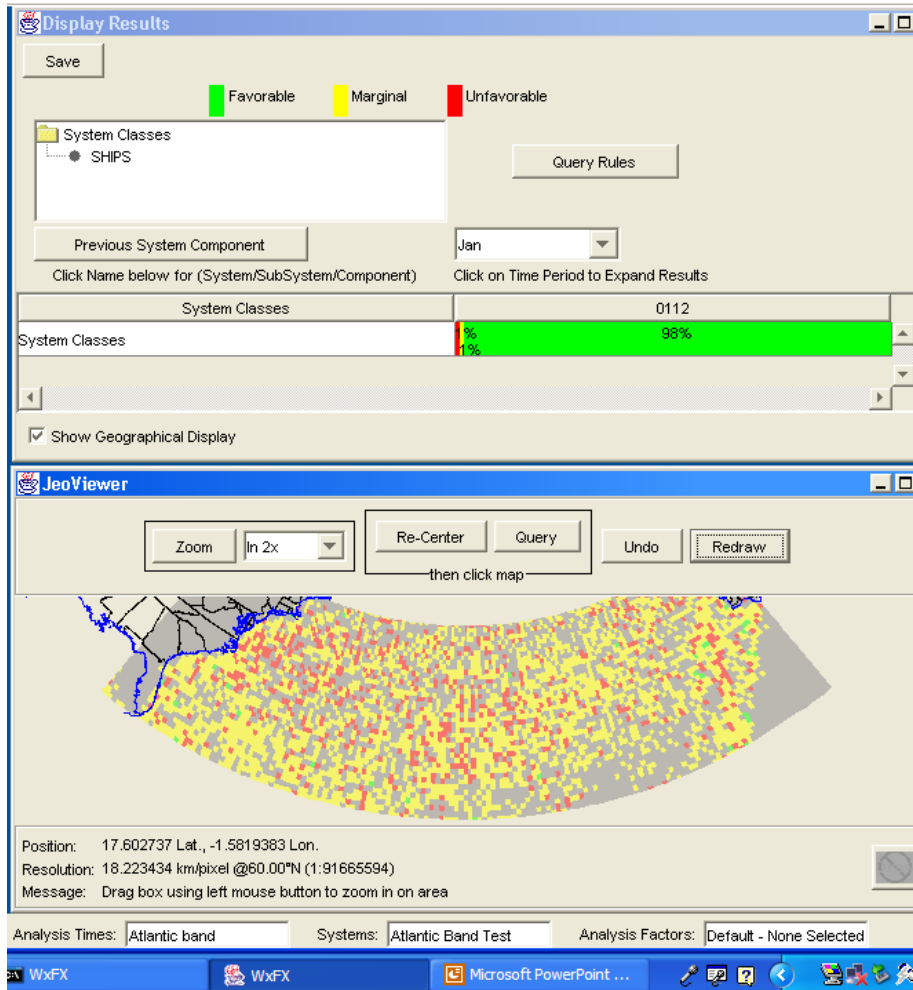
Use Factors For Selected Systems

- Operational Context and Mission Effectiveness Factors can be Defined and Saved



Status of the WxFX Development Effort

Support for Data Sparse Environments

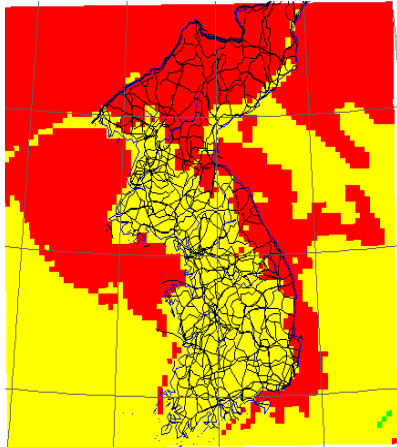


- A “Typical” WxFX Analysis has involved Grids in which Every Spatial Point was Populated with Data
- WxFX can now Support Analyses in which the Spatial Distribution of Data may be Limited (e.g., Ship Observations)
- The User is able to set a “No Data” Threshold

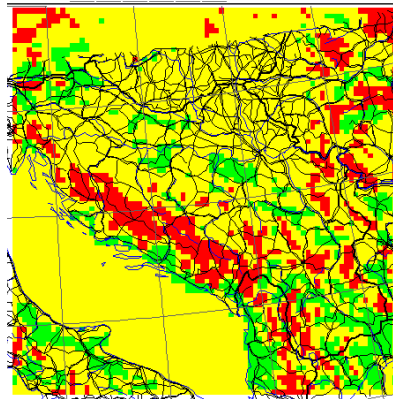


Status of the WxFX Development Effort Support for Warfighter Applications

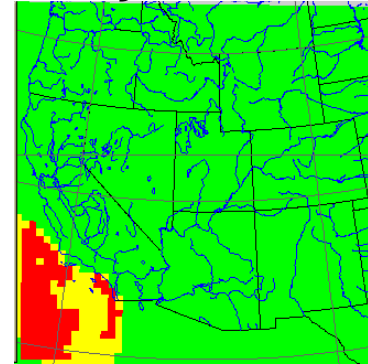
Korea



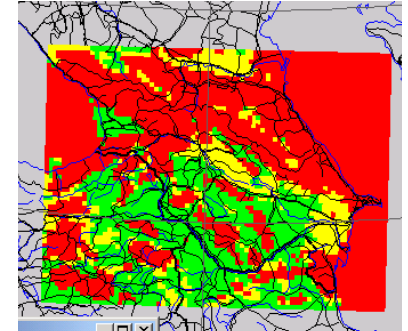
Bosnia



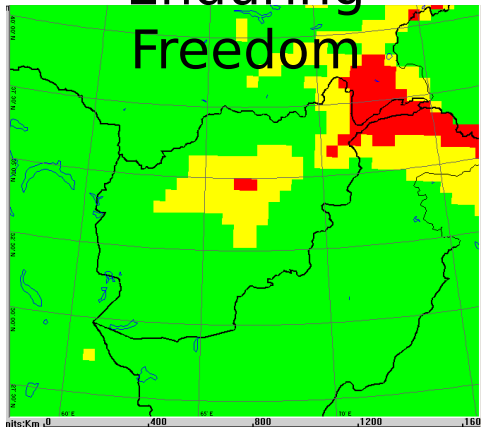
Southwest US
(For JEFX2000)



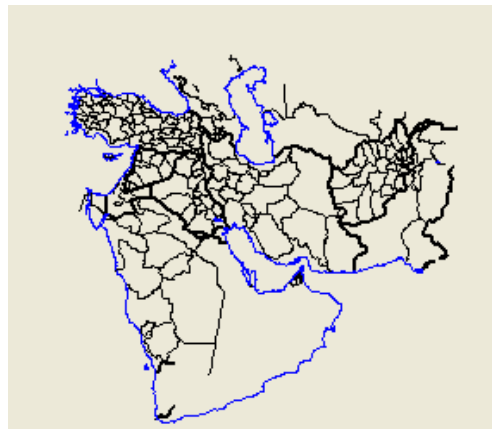
Caucasus
Region



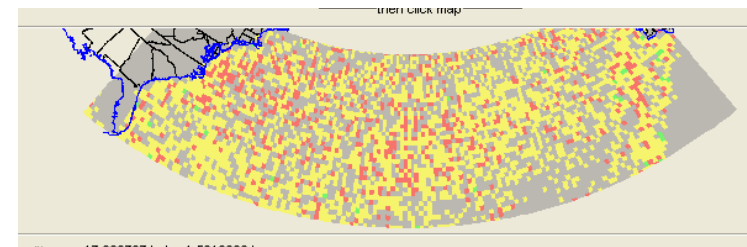
Operation
Enduring
Freedom



Operation Iraqi
Freedom



Atlantic Ocean



Status of the WxFX Development Effort

What's Next?

- Mission Context can be Added to Assist in Tailoring a Study to Mission-Specific Goals
 - Spatially Independent Context has been Implemented
 - Spatially Dependent Context to be Implemented
- Implementing a “Webbable” WxFX
- Integrating with ESG’s (e.g., Using FDR for the Generation of Data Sets)
- Transition to AFCCC Control and Support

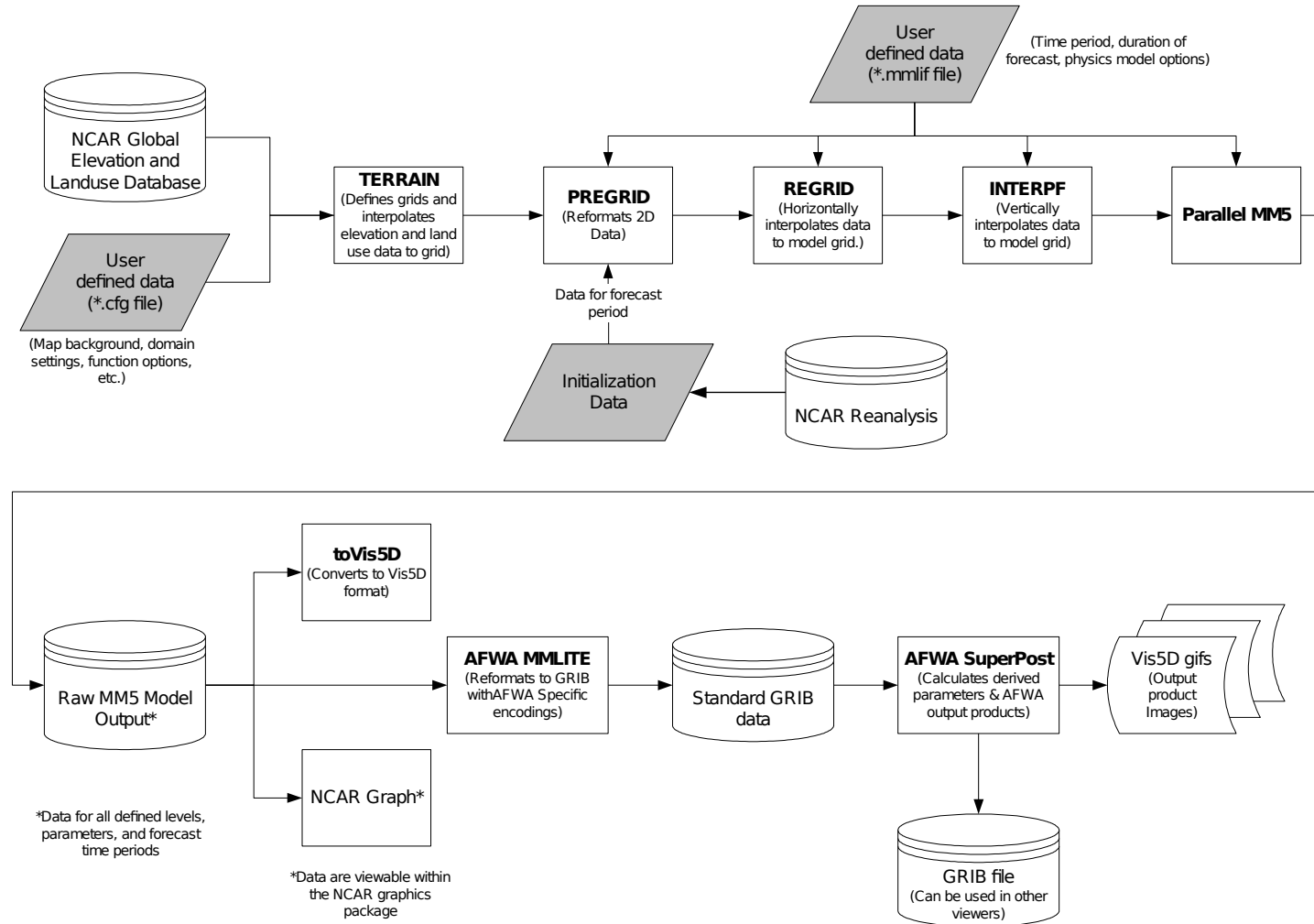


Status of the Cluster-Based MM5 Development Effort

- The Hardware Suite has been Installed at AFCCC
- Working with ASNE-ESG Teams to Interface the MM5 Hardware with the ESG Hardware
- Using 6 Existing AFWA Theater Configurations to Benchmark and Document how to Operate the MM5 Suite in this New Hardware Environment



Status of the Cluster-Based MM5 Development Effort - The Software Suite



Status of the MM5 Development Effort

What's Left to Do?

- Complete the Benchmarking Effort for all 6 Theaters and Document the Procedures
- Complete the Documentation
- Develop a Simple GUI to Produce the Theater Data and Script Files

